

5.2 Plant and animal cells

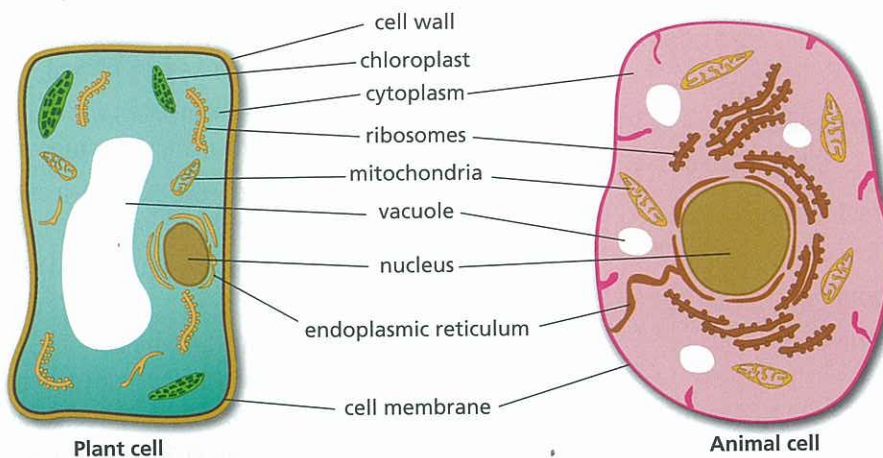
INQUIRY

1 Cell parts

Most cells have the same basic parts, but there are differences.

- The diagrams below show a plant and an animal cell as seen through an electron microscope. List the parts that are the same in both cells. List the parts that are found in plant cells, but not in animal cells.
- The table lists and describes what each cell part does.

- What activities do plant and animal cells carry out that are the same?
 - What activities occur in plant cells but not in animal cells?
- Construct your own collage, model or mobile of a plant or animal cell, using recycled materials. Label each cell part.



A plant and animal cell as seen through an electron microscope

Cell part	Function
Cell membrane	This is the outer boundary that keeps a cell separate from its environment. It acts like a gatekeeper letting things into and out of the cell. A cell membrane is semi-permeable, which means some things can pass through it but others cannot.
Cell wall	This is a tough rigid structure that surrounds a plant cell. It is made of a substance called cellulose. The cell wall around every plant cell helps the plant stand upright. The cell wall has holes in it so that substances can move in and out of the cell. It is the cell wall that makes many plant cells appear like bricks when viewed under a microscope. The cell membrane lies inside the cell wall of a plant.
Cytoplasm	This is the jelly-like living substance that fills all the area inside a cell except the nucleus.
Nucleus	The nucleus is the brain or control centre of the cell. It controls the chemical reactions that take place within the cell. It is also needed for the cell to reproduce; without a nucleus the cell dies.
Endoplasmic reticulum	The endoplasmic reticulum is a collection of membranes that run throughout the cell. It is believed that materials are moved around a cell via these membranes. Smooth endoplasmic reticulum has no ribosomes attached to it. Rough endoplasmic reticulum has ribosomes scattered across its surface.
Ribosome	Ribosomes are where proteins are made.
Mitochondria	The mitochondria (might-oh-KON-dree-a) (single mitochondrion) make energy for the cell through respiration.
Chloroplast	These are disc-shaped and contain a green substance called chlorophyll, which absorbs the light needed for photosynthesis.
Vacuole	Vacuoles are fluid-filled bags within a cell where excess water, wastes and soluble materials are stored. At the centre of a plant cell is a large permanent vacuole. When full the vacuole pushes against the contents of the cell and provides the plant with support so it can stand upright.
Vesicle	A vesicle is a small temporary vacuole. Vesicles are more often found in animal cells.